

U.S. Department of the Interior  
National Park Service  
Natural Resource Stewardship and Science Directorate  
Geologic Resources Division



# Jean Lafitte National Historical Park and Preserve

## *GRI Ancillary Map Information Document*

Produced to accompany the Geologic Resources Inventory (GRI) Digital Geologic  
Data for Jean Lafitte National Historical Park and Preserve

jela\_geology.pdf

Version: 4/10/2019

# Geologic Resources Inventory Map Document for Jean Lafitte National Historical Park and Preserve

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## Geologic Resources Inventory Map Document



# Jean Lafitte National Historical Park and Preserve, Louisiana

## Document to Accompany Digital Geologic-GIS Data

[jela\\_geology.pdf](#)

Version: 4/10/2019

This document has been developed to accompany the digital geologic-GIS data developed by the Geologic Resources Inventory (GRI) program for Jean Lafitte National Historical Park and Preserve, Louisiana (JELA).

Attempts have been made to reproduce all aspects of the original source products, including the geologic units and their descriptions, geologic cross sections, the geologic report, references and all other pertinent images and information contained in the original publication.

This document contains the following information:

- 1) **About the NPS Geologic Resources Inventory Program** – A brief summary of the Geologic Resources Inventory (GRI) Program and its products. Included are web links to the GRI GIS data model, and to the GRI products page where digital geologic-GIS datasets, scoping reports and geology reports are available for download. In addition, web links to the NPS Data Store and GRI program home page, as well as contact information for the GRI coordinator, are also present.
- 2) **GRI Digital Maps and Source Citations** – A listing of all GRI digital geologic-GIS maps produced for this project along with sources used in their completion. In addition, a brief explanation of how each source map was used is provided.
- 3) **Map Unit Listing** – A listing of all geologic map units present on maps for this project, generally listed from youngest to oldest.
- 4) **Map Unit Descriptions** – Descriptions for all geologic map units. The specific unit or units of Jean Lafitte National Historical Park and Preserve (e.g., Acadian Cultural Center Unit) is/are listed before each applicable (geologic) unit description. In addition the source map unit symbol, name and age are also presented.
- 5) **Ancillary Source Map Information** – Additional source map information presented by source map. In this case the correlation of map units figure, (source map) references, and/or notes are presented for each source map (if available).
- 6) **GRI Digital Data Credits** – GRI digital geologic-GIS data and ancillary map information document production credits.

For information about using GRI digital geologic-GIS data contact:

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## About the NPS Geologic Resources Inventory Program

### Background

Recognizing the interrelationships between the physical (geology, air, and water) and biological (plants and animals) components of the Earth is vital to understanding, managing, and protecting natural resources. The Geologic Resources Inventory (GRI) helps make this connection by providing information on the role of geology and geologic resource management in parks.

Geologic resources for management consideration include both the processes that act upon the Earth and the features formed as a result of these processes. Geologic processes include: erosion and sedimentation; seismic, volcanic, and geothermal activity; glaciation, rockfalls, landslides, and shoreline change. Geologic features include mountains, canyons, natural arches and bridges, minerals, rocks, fossils, cave and karst systems, beaches, dunes, glaciers, volcanoes, and faults.

The Geologic Resources Inventory aims to raise awareness of geology and the role it plays in the environment, and to provide natural resource managers and staff, park planners, interpreters, researchers, and other NPS personnel with information that can help them make informed management decisions.

The GRI team, working closely with the Colorado State University (CSU) Department of Geosciences and a variety of other partners, provides more than 270 parks with a geologic scoping meeting, digital geologic-GIS map data, and a park-specific geologic report.

### Products

**Scoping Meetings:** These park-specific meetings bring together local geologic experts and park staff to inventory and review available geologic data and discuss geologic resource management issues. A summary document is prepared for each meeting that identifies a plan to provide digital map data for the park.

**Digital Geologic Maps:** Digital geologic maps reproduce all aspects of traditional paper maps, including notes, legend, and cross sections. Bedrock, surficial, and special purpose maps such as coastal or geologic hazard maps may be used by the GRI to create digital Geographic Information Systems (GIS) data and meet park needs. These digital GIS data allow geologic information to be easily viewed and analyzed in conjunction with a wide range of other resource management information data.

For detailed information regarding GIS parameters such as data attribute field definitions, attribute field codes, value definitions, and rules that govern relationships found in the data, refer to the NPS Geology-GIS Data Model document available at: <http://science.nature.nps.gov/im/inventory/geology/GeologyGISDataModel.cfm>

**Geologic Reports:** Park-specific geologic reports identify geologic resource management issues as well as features and processes that are important to park ecosystems. In addition, these reports present a brief geologic history of the park and address specific properties of geologic units present in the park.

For a complete listing of Geologic Resource Inventory products and direct links to the download site visit the GRI publications webpage [http://www.nature.nps.gov/geology/inventory/gre\\_publications.cfm](http://www.nature.nps.gov/geology/inventory/gre_publications.cfm)

GRI geologic-GIS data is also available online at the NPS Data Store Search Application: <http://irma.nps.gov/App/Reference/Search>. To find GRI data for a specific park or parks select the appropriate park(s), enter "GRI" as a Search Text term, and then select the Search Button.

For more information about the Geologic Resources Inventory Program visit the GRI webpage: <http://www.nature.nps.gov/geology/inventory>, or contact:

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The Geologic Resources Inventory (GRI) program is funded by the National Park Service (NPS) Inventory and Monitoring (I&M) Division.

## GRI Digital Maps and Source Map Citations

The GRI digital geologic-GIS maps for Jean Lafitte National Historical Park and Preserve, Louisiana (JELA):

### **GRI Digital Geologic Map of the French Quarter Visitor Center and Barataria Preserve, Jean Lafitte National Historical Park and Preserve, Louisiana (GRI MapCode JELA)**

This map also covers the Fleming Plantation Area unit.

Louisiana Geologic Survey Source Maps:

Heinrich, P. V., McCulloh, R. P., and Horn, Marty, 2010, New Orleans 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

McCulloh, R.P., Heinrich, P.V., and Snead, John, 2003, Ponchatoula 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 56243) [Ponchatoula 30 x 60 Minute Geologic Quadrangle](#)

Heinrich, P.V., McCulloh, R.P., and Snead, John, 2004, Gulfport 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 68647) [Gulfport 30 x 60 Minute Geologic Quadrangle](#)

The digital map incorporates one or more 7.5 minute quadrangles that are within the extent of the 30 x 60 minute quadrangle maps listed above. Thus, the complete extent of each source map was not used, just specific 7.5 minute quadrangle areas. These 7.5 minute quadrangle either contain the park and preserve units or have been deemed to be areas interest for park and preserve management and protection. Geologic features, namely geologic unit contacts, were digitized from 300 dpi color georeferenced .tif images of each source map. The .tif images were produced by rasterizing .pdf documents of each source map. The .pdf documents were provided by the Louisiana Geologic Survey.

7.5 minute quadrangles listed per 30 x 60 minute quadrangle source map,

New Orleans 30 x 60 Minute Quadrangle - Barataria, Bay L'Ours, Bayou Boeuf, Bertrandville, Catahoula Bay, Cut Off, Des Allemands, Gheens, Hahnville, Lac Des Allemands, Lafitte, Lake Cataouatche East, Lake Cataouatche West, Luling, New Orleans East, New Orleans West and Three Bayou Bay

Ponchatoula 30 x 60 Minute Quadrangle - Indian Beach and Spanish Fort

Gulfport 30 x 60 Minute Quadrangle - Little Woods

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### **GRI Digital Geologic Map of the Acadian Cultural Center, Jean Lafitte National Historical Park and Preserve, Louisiana (GRI MapCode ACCU)**

Louisiana Geologic Survey Source Maps:

Heinrich, P. V. and Autin, W. J., 2000, Baton Rouge 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

Heinrich, P.V., Snead, John, and McCulloh, R.P., 2003, Crowley 30 x 60 Minute Geologic

Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

The digital map incorporates one 7.5 minute quadrangle from each the two 30 x 60 minute quadrangle maps listed above. Thus, the complete extent of each source map was not used, just one specific 7.5 minute quadrangle area per source map. Each 7.5 minute quadrangle contains the park and preserve unit and has been deemed to be areas interest for park and preserve management and protection. Geologic features, namely geologic unit contacts, were digitized from 300 dpi color georeferenced .tif images of each source map. The .tif images were produced by rasterizing .pdf documents of each source map. The .pdf documents were provided by the Louisiana Geologic Survey.

7.5 minute quadrangles listed per 30 x 60 minute quadrangle source map,

Baton Rouge 30 x 60 Minute Quadrangle - Broussard

Crowley 30 x 60 Minute Quadrangle - Lafayette

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**GRI Digital Geologic-GIS Map of the Chalmette Unit, Jean Lafitte National Historical Park and Preserve, Louisiana (GRI MapCode CLMT)**

*\*New 2017 GRI digital geologic-GIS map.*

Louisiana Geologic Survey Source Map:

Heinrich, P., 2014, Black Bay 30 x 60 minute geologic quadrangle (includes portions of North Islands, LA, and Biloxi, MS quadrangles): Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

The digital map incorporates four 7.5 minute quadrangle from the 30 x 60 minute quadrangle map listed above. Thus, the complete extent of the source map was not used, just four specific 7.5 minute quadrangles. Only the Chalmette 7.5 minute quadrangle contains the park and preserve unit. Geologic features, namely geologic unit contacts, were digitized from a 300 dpi color georeferenced .tif image of the source map. The .tif images were produced by rasterizing .pdf documents of each source map. The .pdf documents were provided by the Louisiana Geologic Survey.

7.5 minute quadrangles covered by the source map,

Black Bay 30 x 60 Minute Quadrangle - Belle Chasse, Chalmette, Delacroix, and Martello Castle

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**GRI Digital Geologic Map of the Prairie Acadian Cultural Center, Jean Lafitte National Historical Park and Preserve, Louisiana (GRI MapCode PRAC)**

Louisiana Geologic Survey Source Maps:

Heinrich, P.V., Snead, John, and McCulloh, R.P., 2003, Crowley 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

Snead, John, Heinrich, Paul, and McCulloh, R.P., 2002, Ville Platte 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale

1:100,000. (GRI Source Map ID 41780) [Ville Platte 30 x 60 Minute Geologic Quadrangle](#)

The digital map incorporates one 7.5 minute quadrangle from each the two 30 x 60 minute quadrangle maps listed above. Thus, the complete extent of each source map was not used, just one specific 7.5 minute quadrangle area per source map. Each 7.5 minute quadrangle contains the park and preserve unit and has been deemed to be areas interest for park and preserve management and protection. Geologic features, namely geologic unit contacts, were digitized from 300 dpi color georeferenced .tif images of each source map. The .tif images were produced by rasterizing .pdf documents of each source map. The .pdf documents were provided by the Louisiana Geologic Survey.

7.5 minute quadrangles listed per 30 x 60 minute quadrangle source map,

Crowley 30 x 60 Minute Quadrangle - Eunice South

Ville Platte 30 x 60 Minute Quadrangle - Eunice North

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**GRI Digital Geologic Map of the Wetlands Acadian Cultural Center, Jean Lafitte National Historical Park and Preserve, Louisiana (GRI MapCode WEAC)**

Louisiana Geologic Survey Source Map:

Heinrich, P. V., McCulloh, R. P., and Horn, Marty, 2010, New Orleans 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

The digital map incorporates a single 7.5 minute quadrangle from the 30 x 60 minute quadrangle map listed above. Thus, the complete extent of the source map was not used, just one specific 7.5 minute quadrangle area. The 7.5 minute quadrangle contains the park and preserve unit and has been deemed to be area of interest for park and preserve management and protection. Geologic features, namely geologic unit contacts, were digitized from 300 dpi color georeferenced .tif image of the source map. The .tif image were produced by rasterizing a .pdf document of the source map. The .pdf document was provided by the Louisiana Geologic Survey.

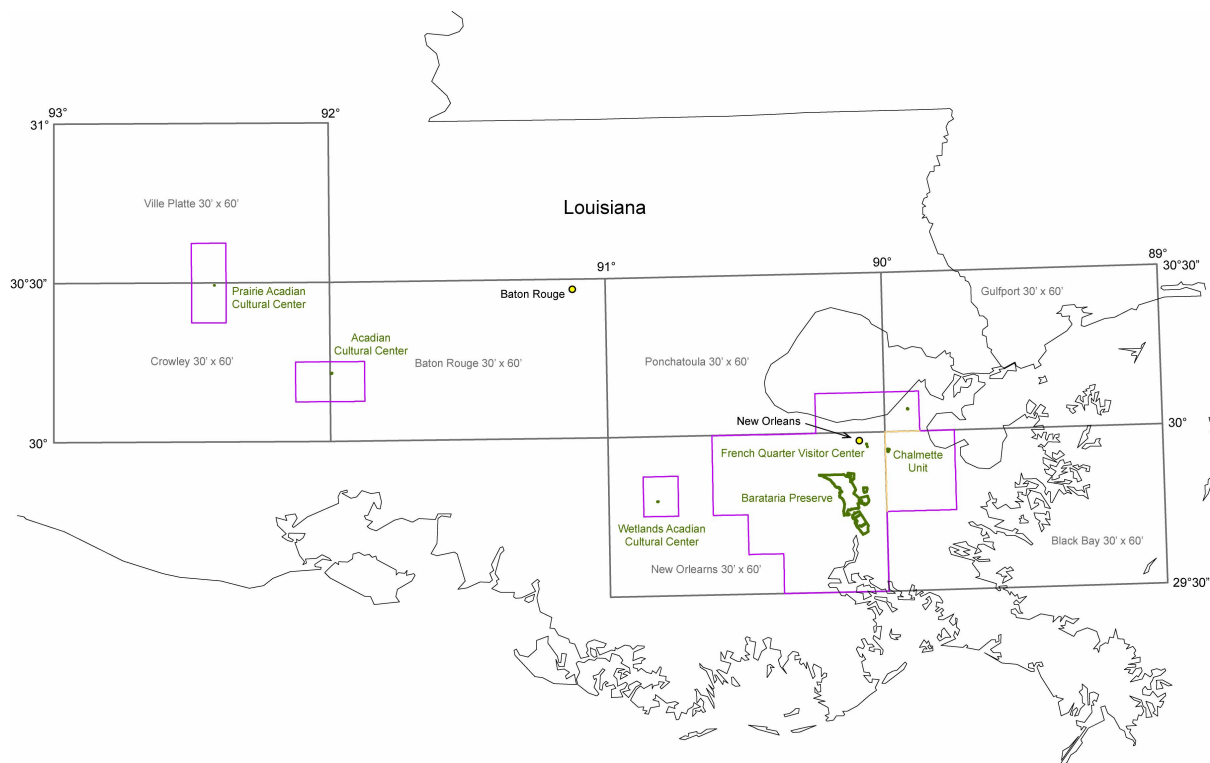
7.5 minute quadrangle from the 30 x 60 minute quadrangle source map,

New Orleans 30 x 60 Minute Quadrangle - Thibodaux Lake

Additional information pertaining to each source map is also presented in the GRI Source Map Information (JELAMAP) table included with the GRI geologic-GIS data.

## Index Map

The following index map displays the units for Jean Lafitte National Historical Park and Preserve (in dashed dark green, as of March, 2019), as well as the extent of each unit's GRI digital geologic-GIS map (in blue, with the boundary between the French Quarter Visitor Center, Fleming Plantation Area, and Barataria Preserve map, and the Chalmette Unit map in orange). The extent of 30' x 60' quadrangle maps used as source maps are also presented (in gray, with latitude and longitude extent values).



Index map produced by Stephanie O'Meara (Colorado State University).

## Map Unit List

The geologic units present in the digital geologic-GIS data produced for Jean Lafitte National Historical Park and Preserve, Louisiana (JELA) are listed below. Units are listed with their assigned unit symbol and unit name (e.g., Hnl - Natural levee). Units are generally listed from youngest to oldest. No description for water is provided. Information about each geologic unit is also presented in the GRI Geologic Unit Information (JELAUNIT) table included with the GRI geology-GIS data.

### Quaternary Period

#### Holocene Epoch

[Hdp](#) - Deposits of the Plaquemines delta lobe, Mississippi River  
[Hdpl](#) - Natural levee complex of the Plaquemines delta lobe, Mississippi River  
[Hll](#) - Natural levee deposits of the Lafourche meander belt  
[Hdl](#) - Deposits of Lafourche delta lobe, Mississippi River  
[Hds](#) - Deposits of the St. Bernard delta lobe, Mississippi River  
[Hdsl](#) - Natural levee deposits of the St. Bernard delta lobe, Mississippi River  
[Hdsm](#) - Meander belt of the St. Bernard delta lobe, Mississippi River  
[Hua](#) - Holocene alluvium, undifferentiated  
[Hb](#) - Backswamp deposit  
[Hs](#) - Small river deposits, undifferentiated  
[Hrm](#) - Meander belt of the Teche course of the Red River  
[Hmm1](#) - Mississippi River meander belt 1  
[Hml1](#) - Natural levee complex of Mississippi River meander belt 1  
[Hmc1](#) - Crevasse complex of Mississippi River meander belt 1  
[Hmm3u](#) - Mississippi River meander belt 3, upper deposits  
[Hml3u](#) - Natural levee complex of Mississippi River meander belt 3, upper deposits  
[Hmc3u](#) - Crevasse complex of Mississippi River meander belt 3, upper deposits  
[Hmm3l](#) - Mississippi River meander belt 3, lower deposits

#### Pleistocene Epoch

[PEpl](#) - Peoria Loess  
[PEpbcu](#) - Upper Big Cane alloformation  
[PEpbcl](#) - Lower Big Cane alloformation  
[PEpav](#) - Avoyelles alloformation  
[PEpbe](#) - Beaumont alloformation

## Map Unit Descriptions

Descriptions of all geologic map units, generally listed from youngest to oldest, are presented below. Unit descriptions are presented by JELA park unit (i.e., Acadian Cultural Center Unit, Barataria Preserve Unit, Chalmette Battlefield Unit, Chitimacha Cultural Center Unit, French Quarter Visitor Center, Prairie Acadian Cultural Center Unit, Tunica-Biloxi Museum Unit and/or Wetlands Acadian Cultural Center Unit). Units maybe grouped for some unit descriptions if the geologic unit is relevant to more than one park unit and is from the same source map. A few unit descriptions mention geologic units not present on any GRI digital geologic-GIS map for Jean Lafitte National Historical Park and Preserve nor are they described in this document. See the source publication for descriptions and information concerning these units. Louisiana Geological Survey source map unit symbols use a "P" to denote Pleistocene units, whereas the GRI uses the symbol abbreviation of "PE".

### Hdp - Deposits of the Plaquemines delta lobe, Mississippi River (Holocene)

#### Chalmette Battlefield Unit

*Hdp - Deposits of the Plaquemines and Balize delta lobes, Mississippi River (Holocene)*

deltaic deposits underlying the delta plain of the Plaquemines and Balize delta lobes. They are composed of cyclically interbedded interdistributary peat and clay; natural levee silt and clay; distributary sand; delta-front sand; and prodelta mud and clay. Discontinuous sandy beaches that are too narrow and thin to map separately occur in places along the shoreline of these delta lobes. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

#### French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit

*Hdp - Deposits of the Plaquemine delta lobe, Mississippi River (Holocene)*

Deltaic deposits underlying the delta plain of the Plaquemine delta lobe. They are composed of cyclically interbedded interdistributary peat and clay; natural levee silt and clay; distributary sand; delta-front sand; and prodelta mud and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

### Hdpl - Natural levee complex of the Plaquemines delta lobe, Mississippi River (Holocene)

#### Chalmette Battlefield Unit

Natural levee complex of the Plaquemines and Balize delta lobes, Mississippi River-deposits of the natural levee complex of the Plaquemines and Balize delta lobes, Mississippi River. The natural levees of the Plaquemines distributary course consist predominantly of silt, silty clay, and clay. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

#### French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit

*Hdpl - Natural levee complex of the Plaquemine delta lobe, Mississippi River (Holocene)*

Deposits of the natural levee complex of the Plaquemines delta lobe, Mississippi River. The natural levees of the Plaquemines distributary course consist predominantly of silt, silty clay, and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

### Hll - Natural levee deposits of the Lafourche meander belt (Holocene)

#### French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit

**Hll - Lafourche natural levee deposits (Holocene)**

Deposits forming low natural levees flanking the meander belts of the Lafourche distributary course of the Mississippi River and its main distributary channels. The natural levees of the Lafourche distributary course consist of sandy silts and silt that grade downstream and away from their crests into silty clay and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

**Hdl - Deposits of Lafourche delta lobe, Mississippi River (Holocene)****French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit****Hdl - Deposits of the Lafourche delta lobe, Mississippi River (Holocene)**

Deltaic deposits underlying the delta plain of the Lafourche delta lobe. They are composed of cyclically interbedded interdistributary peat and clay; natural levee silt and clay; distributary sand; delta-front sand; and prodelta mud and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

**Hds - Deposits of the St. Bernard delta lobe, Mississippi River (Holocene)****Chalmette Battlefield Unit****Hds - Deposits of the St. Bernard delta lobe, Mississippi River (Holocene)**

Deltaic deposits underlying the delta plain of the St. Bernard delta lobe. They are composed of cyclically interbedded interdistributary peat and clay; natural levee silt and clay; distributary sand; delta-front sand; and prodelta mud and clay. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

**French Quarter Visitor Center and Barataria Preserve Unit****Hds - Deltaic plain of the St. Bernard delta lobe, Mississippi River (Holocene)**

Deposits of the deltaic plain of the St. Bernard delta lobe, Mississippi River. (GRI Source Map ID 56243) [Ponchatoula 30 x 60 Minute Geologic Quadrangle](#)

**Hds - Deltaic plain of the St. Bernard delta lobe, Mississippi River (Holocene)**

Deposits of the deltaic plain of the St. Bernard delta lobe, Mississippi River. (GRI Source Map ID 68647) [Gulfport 30 x 60 Minute Geologic Quadrangle](#)

**French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit****Hds - Deposits of the St. Bernard delta lobe, Mississippi River (Holocene)**

Deltaic deposits underlying the delta plain of the St. Bernard delta lobe. They are composed of cyclically interbedded interdistributary peat and clay; natural levee silt and clay; distributary sand; delta-front sand; and prodelta mud and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

**Hdsl - Natural levee deposits of the St. Bernard delta lobe, Mississippi River (Holocene)****Chalmette Battlefield Unit****Natural levee complex of the St. Bernard delta lobe, Mississippi River (Holocene)**

Deposits of natural levee complexes of the St. Bernard delta lobe, Mississippi River. The natural levees of the St. Bernard distributary courses consist predominantly of silt, silty clay and clay. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

**French Quarter Visitor Center and Barataria Preserve Unit**

*Hdsl - Natural levee deposits of the St. Bernard delta lobe, Mississippi River (Holocene)*

Deposits of the natural levee complex of the St. Bernard delta lobe, Mississippi River. (GRI Source Map ID 56243) [Ponchatoula 30 x 60 Minute Geologic Quadrangle](#)

*Hdsl - Natural levee deposits of the St. Bernard delta lobe, Mississippi River (Holocene)*

Deposits of the natural levee complex of the St. Bernard delta lobe, Mississippi River. (GRI Source Map ID 68647) [Gulfport 30 x 60 Minute Geologic Quadrangle](#)

**French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hdsl - Natural levee complex of the St. Bernard delta lobe, Mississippi River (Holocene)*

Deposits of natural levee complexes of the St. Bernard delta lobe, Mississippi River. The natural levees of the St. Bernard distributary courses consist predominantly of silt, silty clay and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

**Hdsm - Meander belt of the St. Bernard delta lobe, Mississippi River (Holocene)****Chalmette Battlefield Unit**

*Hdsm - Meander belt of distributary course of the St. Bernard delta lobe, Mississippi River (Holocene)*

Sandy point bar deposits along the Bayou La Loutre distributary course of the St. Bernard delta lobe, Mississippi River. They are mapped where overlying natural levee deposits (Hdsl) are sufficiently thin that scroll marks, however faint, are perceptible as a surface indicator of point-bar ridge-and-swale topography. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

**French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hdsm - Meander belt of distributary course of the St. Bernard delta lobe, Mississippi River (Holocene)*

Sandy point bar deposits along the Bayou des Familles distributary course of the St. Bernard delta lobe, Mississippi River. They are mapped where overlying natural levee deposits (Hdsl) are sufficiently thin that scroll marks, however faint, are perceptible as a surface indicator of point-bar ridge-and-swale topography. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

**Hua - Holocene alluvium, undifferentiated (Holocene)****Acadian Cultural Center Unit**

*Hua - Undifferentiated alluvium of small upland streams (Holocene)*

Alluvial deposits of minor creeks and streams filling valleys cut into older deposits. The modern floodplain within these valleys constitutes the surface of these deposits. The lithology reflects the lithology of the older deposits from which they have been eroded and reworked. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

**Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit**

*Hua - Undifferentiated alluvium of small upland streams (Holocene)*

Alluvial deposits of minor creeks and streams filling valleys cut into older deposits. The modern floodplain within these valleys constitutes the surface of these deposits. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

**Prairie Acadian Cultural Center Unit**

*Hua - Undifferentiated alluvium of small upland streams (Holocene)*

Alluvial deposits of minor streams and creeks filling valleys cut into older deposits. The modern floodplain within these valleys constitutes the surface of these deposits. The lithology of these alluvial deposits reflects the reworked lithology of their adjacent source. (GRI Source Map ID 41780) [Ville Platte 30 x 60 Minute Geologic Quadrangle](#)

## **Hb - Backswamp deposit (Holocene)**

### **Acadian Cultural Center Unit**

*Hb - Backswamp deposits (Holocene)*

Holocene deposits of the Mississippi and Atchafayala rivers. They consist of fine-grained, usually clayey and often organically rich sediments that underlie flood basins between meander belts. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### **French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hb - Backswamp deposits (Holocene)*

Fine-grained Holocene deposits of rivers, underlying the flood basins between meander belts. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

## **Hs - Small river deposits, undifferentiated (Holocene)**

### **Acadian Cultural Center Unit**

*Hs - Small river deposits, undifferentiated (Holocene)*

Undifferentiated alluvial deposits of small rivers consisting of recognizable but unmapped natural levees, distributaries, and abandoned channels. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

## **Hrm - Meander belt of the Teche course of the Red River (Holocene)**

### **Acadian Cultural Center Unit**

*Hrm - Meander belt of the Teche course of the Red River (Holocene)*

Brownish red point bar and overbank deposits of the relict course of the Red River that have accumulated within the Bayou Teche occupation of Mississippi River meander belt No. 3. Locally, these deposits may include younger natural levee and overbank deposits of the modern Bayou Teche that are too small to map at this scale. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

## **Hmm1 - Mississippi River meander belt 1 (Holocene)**

### **Chalmette Battlefield Unit**

*Hmm1 - Mississippi River meander belt 1 (Holocene)*

Point bar deposits of Mississippi River meander belt 1, buried by a thin layer of overbank sediments. These point bar deposits typically are composed predominantly of silt, sandy silt, and poorly sorted silty sand. They are mapped where overlying natural levee deposits (Hml1) are sufficiently thin that scroll marks, however faint, are perceptible as a surface indicator of point-bar ridge-and-swale topography. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

### **French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hmm1 - Mississippi River meander belt 1 (Holocene)*

Point bar deposits of Mississippi River meander belt 1, buried by a thin layer of overbank sediments. These point bar deposits typically are composed predominantly of silt, sandy silt, and poorly sorted silty sand. They are mapped where overlying natural levee deposits (Hml1) are sufficiently thin that scroll marks, however faint, are perceptible as a surface indicator of point-bar ridge-and-swale topography. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

## **Hml1 - Natural levee complex of Mississippi River meander belt 1 (Holocene)**

### **Chalmette Battlefield Unit**

*Natural levee complex of Mississippi River meander belt 1 (Holocene)*

Deposits of the natural levees flanking Mississippi River meander belt 1. Typically, they consist of sandy silt, silt, clayey silt, silty clay, and clay. (GRI Source Map ID 76055) [Black Bay 30 x 60 Minute Geologic Quadrangle](#)

### **French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hml1 - Natural levee complex of Mississippi River meander belt 1 (Holocene)*

Deposits of the natural levees flanking Mississippi River meander belt 1. Typically, they consist of sandy silt, silt, clayey silt, silty clay, and clay. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

## **Hmc1 - Crevasse complex of Mississippi River meander belt 1 (Holocene)**

### **French Quarter Visitor Center, Barataria Preserve Unit and Wetlands Acadian Cultural Center Unit**

*Hmc1 - Crevasse complex of Mississippi River meander belt 1 (Holocene)*

Crevasse channel and splay deposits of Mississippi River meander belt 1. (GRI Source Map ID 75723) [New Orleans 30 x 60 Minute Geologic Quadrangle](#)

## **Hmm3u - Mississippi River meander belt 3, upper deposits (Holocene)**

### **Acadian Cultural Center Unit**

*Hmm3u - Upper (Bayou Teche) occupation of Mississippi River meander belt No. 3 (Holocene)*

Point-bar channel deposits associated with the relict Bayou Teche course of the Mississippi River. This is the most recent meander-belt 3 occupation. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

## **Hml3u - Natural levee complex of Mississippi River meander belt 3, upper deposits (Holocene)**

### **Acadian Cultural Center Unit**

*Hml3u - Natural levee complex of Bayou Teche meander belt (Holocene)*

Silty to sometimes sandy overbank deposits that compose the low natural levees that flank the Bayou Teche occupation of meander belt No. 3. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### **Hmc3u - Crevasse complex of Mississippi River meander belt 3, upper deposits (Holocene)**

#### **Acadian Cultural Center Unit**

*Hmc3u - Crevasse complex of Bayou Teche meander belt (Holocene)*

Silty to sandy deposits of crevasse splays originating from the Bayou Teche occupation of meander belt No. 3. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### **Hmm3l - Mississippi River meander belt 3, lower deposits (Holocene)**

#### **Acadian Cultural Center Unit**

*Hmm3l - Lower (Bayou Portage) meander belt of Mississippi River meander belt No. 3 (Holocene)*

Point bar deposits associated with the relict Bayou Portage occupation of the Mississippi River meander belt No. 3. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### **PEpl - Peoria Loess (Pleistocene)**

No additional information present on source maps.

### **Prairie AlloGroup**

#### **Acadian Cultural Center Unit**

*Prairie Allogroup, Late Sangamon (Pleistocene)*

A diverse depositional sequence of late to middle Pleistocene deposits of the Mississippi River, its tributaries, and coastal plain streams; includes terraces, fluvial (meander-belt, backswamp, and braided-stream), colluvial, estuarine, deltaic, and marine units deposited over a considerable part of the late Pleistocene (Wisconsin to Sangamon). Surfaces generally show little dissection and are topographically higher than the Holocene units. Multiple levels are recognized along alluvial valleys and coast-parallel trends. The Prairie is divided into two temporal phases of deposition. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

#### **Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit**

*Prairie Allogroup, Late Sangamon (Pleistocene)*

A diverse depositional sequence of late-to-middle Pleistocene deposits of the Mississippi River, its tributaries, and coastal-plain streams; includes terraced, fluvial (meander-belt, backswamp, and braided-stream), colluvial, estuarine, deltaic, and marine units deposited over a considerable part of the late Pleistocene (Wisconsin to Sangamon). Surfaces generally show little dissection and are topographically higher than the Holocene units. Multiple levels are recognized along alluvial valleys and coast-parallel trends. The Prairie is divided into two temporal phases of deposition. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

### **Prairie AlloGroup, Late Sangamon**

#### **Acadian Cultural Center Unit**

*Prairie Allogroup, Late Sangamon (Pleistocene)*

Younger of the Prairie Allogroup temporal phases. Alluvial deposits of ancestral late Pleistocene streams. In the coast-parallel Prairie the unit consists of meander-belt deposits of the late Pleistocene Mississippi River, and deposits of the late Pleistocene coastal plain streams. Deposits associated with these valleys are commonly found within the upper portions of the drainage basins.

The surface is blanketed by Peoria Loess near the loess source (the Mississippi River flood plain), and the sediments at the top of the unit range from sand to clay. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

#### **Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit**

*Prairie Allogroup, Late Sangamon (Pleistocene)*

Younger of the Prairie Allogroup temporal phases. Alluvial deposits of ancestral late Pleistocene streams. In the coast-parallel Prairie, the unit consists of meander-belt deposits of the late Pleistocene Mississippi River, and deposits of the late Pleistocene coastal plain streams. Deposits associated with these valleys are commonly found within the upper portions of the drainage basins. The surface is blanketed by Peoria Loess near the loess source (the Mississippi River flood plain), and the sediments at the top of the unit range from sand to clay. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

#### **PEpbcu - Upper Big Cane alloformation (Pleistocene)**

##### **Acadian Cultural Center Unit**

*Ppbcu - Upper Big Cane alloformation (Pleistocene)*

Stratigraphically higher sequence underlying the lower of two geomorphic surfaces developed on the Big Cane alloformation. It appears to be a former Red River meander belt. It is covered by Peoria Loess that is overlain by a veneer of Holocene alluvium. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

#### **PEpbcl - Lower Big Cane alloformation (Pleistocene)**

##### **Acadian Cultural Center Unit**

*Ppbcl - Lower Big Cane alloformation (Pleistocene)*

Stratigraphically lower sequence underlying the higher of two geomorphic surfaces developed on the Big Cane alloformation. It is younger than the Avoyelles Alloformation, and is partially buried by Holocene Red River alluvium. It is covered by Peoria Loess, and possibly is the meander-belt deposits of a late Pleistocene Red River. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

#### **PEpav - Avoyelles alloformation (Pleistocene)**

##### **Acadian Cultural Center Unit**

*Ppav - Avoyelles alloformation (Pleistocene)*

Meander-belt deposits of the late Pleistocene Mississippi River terraced above and parallel to its alluvial valley in central Louisiana. Remnants of constructional meander-belt morphology that form the Lafayette meander belt are preserved. The surface is blanketed by Peoria Loess, and the sediments at the top of the unit range from sand to clay. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

#### **Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit**

*Ppav - Avoyelles alloformation (Pleistocene)*

Meander-belt deposits of the late Pleistocene Mississippi River terraced above and parallel to its alluvial valley in central Louisiana. Remnants of constructional meander-belt morphology that form the Lafayette meander belt are preserved. The surface is blanketed by Peoria Loess, and the sediments at the top of the unit range from sand to clay. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

## Prairie Alloformation / Allogroup, Early Sangamon

### Acadian Cultural Center Unit

*Prairie Allogroup, Early Sangamon (Pleistocene)*

Older of the Prairie Allogroup temporal phases. A diverse depositional sequence of flood plain, meander-belt, and backswamp deposits of the middle-Pleistocene ancestral Mississippi River, Red River, local fluvial equivalents of tributary streams, and coastal-plain streams. Where this unit is mapped near the Mississippi River flood plain, it is blanketed by both Peoria and Sicily Island Loess or loess-derived colluvium. The unit dips into the subsurface beneath the Prairie Allogroup, Late Sangamon in the coast-parallel region, but is commonly terraced above it in stream valleys. The sediments are generally clay, silty clay loam, or sandy clay loam, and grade to sand and gravel. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit

*Prairie Allogroup, Early Sangamon (Pleistocene)*

Older of the Prairie Allogroup temporal phases. A diverse depositional sequence of flood plain, meander-belt, and backswamp deposits of the middle-Pleistocene ancestral Mississippi River, Red River, local fluvial equivalents of tributary streams, and coastal-plain streams. Where this unit is mapped near the Mississippi River flood plain, it is blanketed by Peoria Loess or loess-derived colluvium. The unit dips into the subsurface beneath the Prairie Allogroup, Late Sangamon in the coast-parallel region, but is commonly terraced above it in stream valleys. The sediments are generally clay, silty clay loam, or sandy clay loam, but may include some sand and gravel in deposits of relict channels. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

### Prairie Acadian Cultural Center Unit

*Prairie Allogroup, Early Sangamon (Pleistocene)*

A diverse depositional sequence of flood plain, meander-belt, and backswamp deposits of the middle Pleistocene ancestral Mississippi River, Red River, local fluvial equivalents of tributary streams, and coastal plain streams. Older and topographically higher of the two Prairie Allogroup temporal phases. Where this unit is mapped near the Mississippi River flood plain, it is blanketed by both Peoria and Sicily Island Loess or loess-derived colluvium. In the coast-parallel region, this unit dips into the subsurface beneath the Pleistocene Prairie Allogroup, Late Sangamon, but is commonly terraced above it in stream valleys. The sediments are generally clay, silty clay loam, or sandy clay loam, and grade to sand and gravel. (GRI Source Map ID 41780) [Ville Platte 30 x 60 Minute Geologic Quadrangle](#)

## PEpbe - Beaumont Alloformation (Pleistocene)

### Acadian Cultural Center Unit

*Ppbe - Beaumont alloformation (Pleistocene)*

Oldest and topographically highest of the Prairie surfaces west of the Mississippi Alluvial Valley. It exhibits the relict channels of the Red River, and includes deposits of the Ingleside barrier trend west of the Baton Rouge quadrangle. It is composed of coastal plain deposits of late to middle Pleistocene streams. (GRI Source Map ID 41781) [Baton Rouge 30 x 60 Minute Geologic Quadrangle](#)

### Acadian Cultural Center Unit and/or Prairie Acadian Cultural Center Unit

*Ppbe - Beaumont alloformation (Pleistocene)*

Stratigraphic sequence underlying the oldest and topographically highest of the Prairie surfaces west of the Mississippi alluvial valley. It exhibits the relict channels of the Red River, and includes deposits of the Ingleside barrier trend west of the Crowley quadrangle. It is composed of coastal-plain deposits of late-to-middle Pleistocene streams. (GRI Source Map ID 56242) [Crowley 30 x 60 Minute Geologic Quadrangle](#)

### Prairie Acadian Cultural Center Unit

*Ppbe - Beaumont alloformation (Pleistocene)*

Coastal plain deposits of late to middle Pleistocene streams: the oldest and topographically highest surface of the Prairie Allogroup units of southwestern Louisiana. It exhibits the relict channels of the Red and Calcasieu rivers, and includes deposits of the Ingleside barrier trend to the southwest of the Ville Platte quadrangle. (GRI Source Map ID 41780) [Ville Platte 30 x 60 Minute Geologic Quadrangle](#)

## Baton Rouge 30 x 60 Minute Quadrangle

## Correlation of Map Units

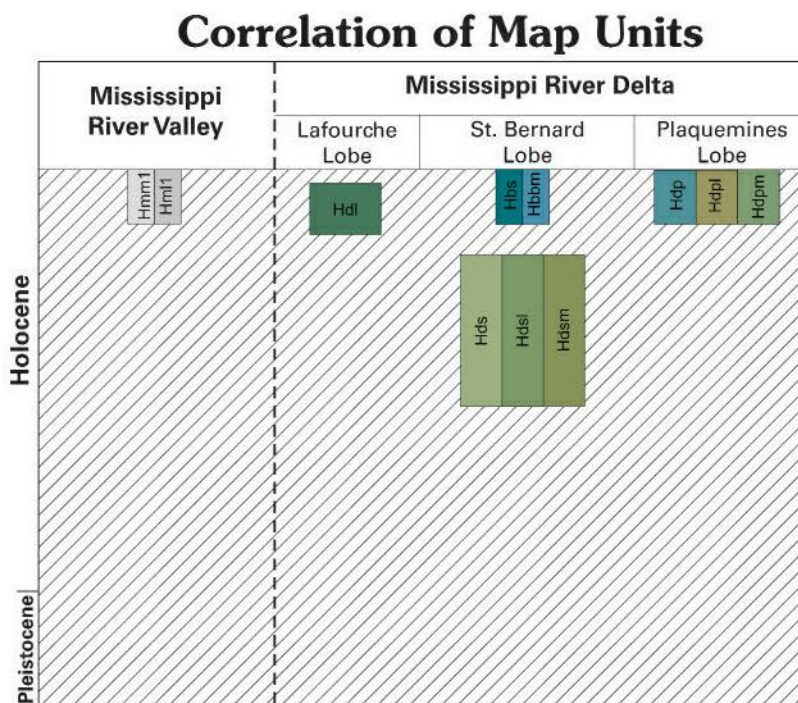
[illegible]

*\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).*

## Black Bay 30 x 60 Minute Quadrangle

Heinrich, P., 2014, Black Bay 30 x 60 minute geologic quadrangle (includes portions of North Islands, LA, and Biloxi, MS quadrangles): Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 76055)

## Correlation of Map Units



Graphic from: [Black Bay 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 76055)

**\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).**

## References

- Dunbar, J. B., M. R. Blaes, S. E. Dueitt, J. R. May, and K. W. Stroud, 1994, Geological investigation of the Mississippi River deltaic plain: Report 2, Technical Report GL-84-15, prepared for U.S. Army Corps of Engineers, New Orleans district (unpaginated: oversized pages, including plates at 1:62,500 scale).
- Engineer Agency for Resources Inventories, 1973, Inventory of basic environmental data, south Louisiana, Mermentau River Basin to Chandeleur Sound, with special emphasis on the Atchafalaya Basin: Prepared for U.S. Army Corps of Engineers, New Orleans district.
- May, J. R., L. D. Britsch, J. B. Dunbar, J. P. Rodriguez, and L. B. Wlosinski, 1984, Geological investigation of the Mississippi River deltaic plain: U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Technical Report GL-84-15, prepared for U.S. Army Corps of Engineers, New Orleans district (unpaginated: Oversized pages, including plates at 1:62,500 scale).

Saucier, R. T., 1994, *Geomorphology and Quaternary geologic history of the Lower Mississippi Valley: volume 2*, Vicksburg, Mississippi, U. S. Army Corps of Engineers, Waterways Experiment Station (unpaginated: 31 oversized pages, including 28 plates (1:250,000-scale).

Saucier, R. T., and J. I. Snead (compilers), 1989, *Quaternary geology of the Lower Mississippi Valley*: in Morrison, R. B., ed., *Quaternary non-glacial geology: conterminous United States*: Boulder, Colorado, Geological Society of America, *The Geology of North America*, v. K-2, Plate 6, scale 1:1,100,000.

New mapping by the compiler based in part on LIDAR quarter-quadrangle images (source: Louisiana Federal Emergency Management Agency, and U.S. Army Corps of Engineers, St. Louis District), and digital orthophoto quarter quadrangle images, downloaded from the Atlas website (<http://atlas.lsu.edu>); and on the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Survey Geographic (SSURGO) Database.

The compiler gratefully acknowledges constructive technical review by L. D. Britsch.

Text from: [Black Bay 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 76055)

## Notes

Note The shoreline used for this map was selected to permit depiction of historic infrastructure and cadastral information because feedback regarding use of historic shorelines that preserve such cultural information from users of maps in the delta plain has been positive, and actual land loss consistently has outpaced shoreline depictions on newer maps in recent decades.

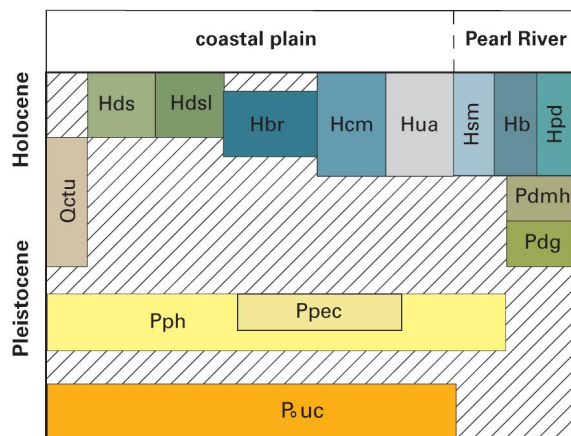
Text from: [Black Bay 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 76055)

## Crowley 30 x 60 Minute Quadrangle

Heinrich, P.V., Snead, John, and McCulloh, R.P., 2003, *Crowley 30 x 60 Minute Geologic Quadrangle*, Louisiana Geological Survey, *Geologic Quadrangle Series Map* (1:100,000), scale 1:100,000 (GRI Source Map ID 56242)

## Correlation of Map Units

### Correlation of Map Units



Graphic from: [Crowley 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 56242)

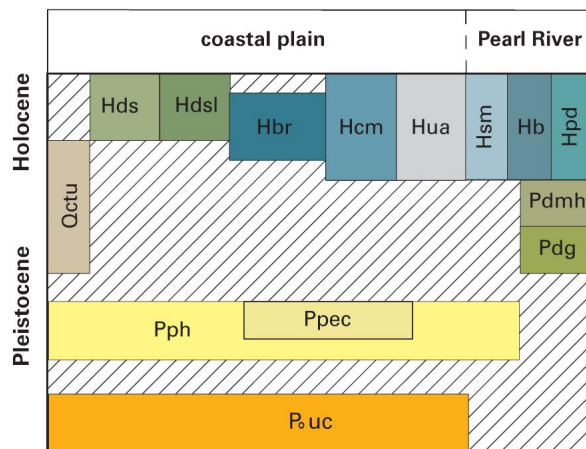
**\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).**

## Gulfport 30 x 60 Minute Quadrangle

Heinrich, P.V., McCulloh, R.P., and Snead, John, 2004, Gulfport 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000 (GRI Source Map ID 68647)

### Correlation of Map Units

#### Correlation of Map Units



Graphic from: [Gulfport 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 68647)

**\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).**

## References

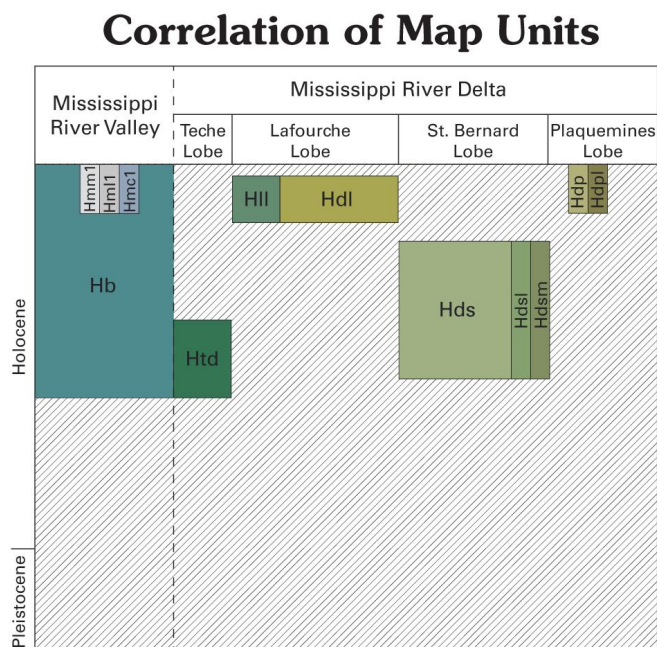
- Autin, W. J., A. T. Davison, B. J. Miller, W. J. Day, and I. A. Schumacher, 1988, Exposure of late Pleistocene meander-belt facies at Mt. Pleasant, Louisiana: Transactions of the Gulf Coast Association of Geological Societies, v. 38, p. 375-303.
- Blum, M. D., A. E. Carter, T. Zayac, and R. Globe, 2002, Middle Holocene sea-level and the evolution of the Gulf of Mexico Coast (USA): Journal of Coastal Research, v. 36, p. 65-80.

Text from: [Gulfport 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 68647)

## New Orleans 30 x 60 Minute Quadrangle

Heinrich, P. V., McCulloh, R. P., and Horn, Marty, 2010, New Orleans 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000 (*GRI Source Map ID 75723*)

## Correlation of Map Units



Graphic from: [New Orleans 30 x 60 Minute Geologic Quadrangle](#) (*GRI Source Map ID 75723*)

**\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).**

## References

### Faults

Kuecher, G. J., 1994, Geologic framework and consolidation settlement potential of the Lafourche delta, topstratum valley fill: implications for wetland loss in Terrebonne and Lafourche parishes, Louisiana: Ph.D. dissertation, Louisiana State University, Baton Rouge, 348 p. plus plates.

### Surface Geology

Britsch, L. D., and J. B. Dunbar, 1990, Geomorphic investigation of Davis Pond, Louisiana: U. S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi, Technical Report GL-90-12 (Prepared for U.S. Army Engineer District, New Orleans), 66 p. plus appendices.

Busch, R. E. Jr., W. C. Ward, and H. C. Skinner (compilers), 1974, Physiographic map of the Atchafalaya Basin and a portion of the Lower Red River Valley, Louisiana: U.S. Army Corps of Engineers, New Orleans, Louisiana, scale 1:250,000.

Engineer Agency for Resources Inventories, 1975, Inventory of basic environmental data, New Orleans—Baton Rouge metropolitan area: Prepared for U.S. Army Corps of Engineers, New Orleans district.

- Engineer Agency for Resources Inventories, 1973, Inventory of basic environmental data, south Louisiana, Mermentau River Basin to Chandeleur Sound, with special emphasis on the Atchafalaya Basin: Prepared for U.S. Army Corps of Engineers, New Orleans district.
- Heinrich, P. V., 2005, Review of the engineering geology of St. Bernard Parish, Louisiana: Louisiana Geological Survey NewsInsights, v. 15, no. 3, p. 6-11.
- May, J. R., L. D. Britsch, J. B. Dunbar, J. P. Rodriguez, and L. B. Wlosinski, 1984, Geological investigation of the Mississippi River deltaic plain: U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Technical Report GL-84-15, prepared for U.S. Army Corps of Engineers, New Orleans district [unpaginated: oversized pages, including plates at 1:62,500 scale].
- Saucier, R. T., 1994, Geomorphology and Quaternary geologic history of the Lower Mississippi Valley: volume 2, Vicksburg, Mississippi, U. S. Army Corps of Engineers, Waterways Experiment Station [unpaginated: 31 oversized pages, including 28 plates (1:250,000-scale)].
- Saucier, R. T., 1969, Geological investigation of the Mississippi River area, Artonish to Donaldsonville, Louisiana: U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi, Tech Report S-69-4 [unpaginated: 25 oversized pages, including 21 plates (1:62,500-scale)].
- Saucier, R. T., and J. I. Snead (compilers), 1989, Quaternary geology of the Lower Mississippi Valley: in Morrison, R. B., ed., Quaternary non-glacial geology: conterminous United States: Boulder, Colorado, Geological Society of America, The Geology of North America, v. K-2, Plate 6, scale 1:1,100,000.

Text from: [New Orleans 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 75723)

## Map Notes

New mapping by the compilers based in part on LIDAR quarter-quadrangle images (source: Louisiana Federal Emergency Management Agency, and U.S. Army Corps of Engineers, St. Louis District), and digital orthophoto quarter quadrangle images, downloaded from the Atlas website (<http://atlas.lsu.edu>); and on the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Survey Geographic (SSURGO) Database.

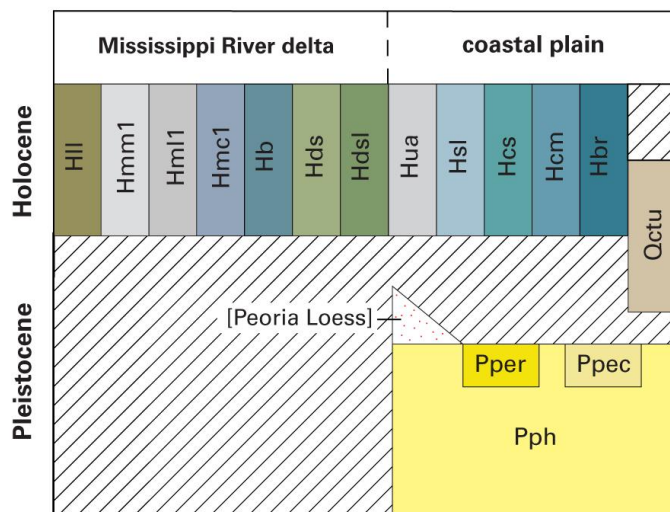
Text from: [New Orleans 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 75723)

## Ponchatoula 30 x 60 Minute Quadrangle

McCulloh, R.P., Heinrich, P.V., and Snead, John, 2003, Ponchatoula 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000 (GRI Source Map ID 56243)

## Correlation of Map Units

### Correlation of Map Units



Graphic from: [Ponchatoula 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 56243)

*\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).*

## References

- Autin, W. J., A. T. Davison, B. J. Miller, W. J. Day, and B. A. Schumacher, 1988, Exposure of late Pleistocene meander-belt facies at Mt. Pleasant, Louisiana: Transactions of the Gulf Coast Association of Geological Societies, v. 38, p. 375-383.
- Blum, M. D., A. E. Carter, T. Zayac, and R. Globe, 2002, Middle Holocene sea-level and the evolution of the Gulf of Mexico Coast (USA): Journal of Coastal Research, v. 36, p. 65-80.

Text from: [Ponchatoula 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 56243)

## Ville Platte 30 x 60 Minute Quadrangle

Snead, John, Heinrich, Paul, and McCulloh, R.P., 2002, Ville Platte 30 x 60 Minute Geologic Quadrangle, Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000 (GRI Source Map ID 41780)

## Correlation of Map Units

### Correlation of Map Units

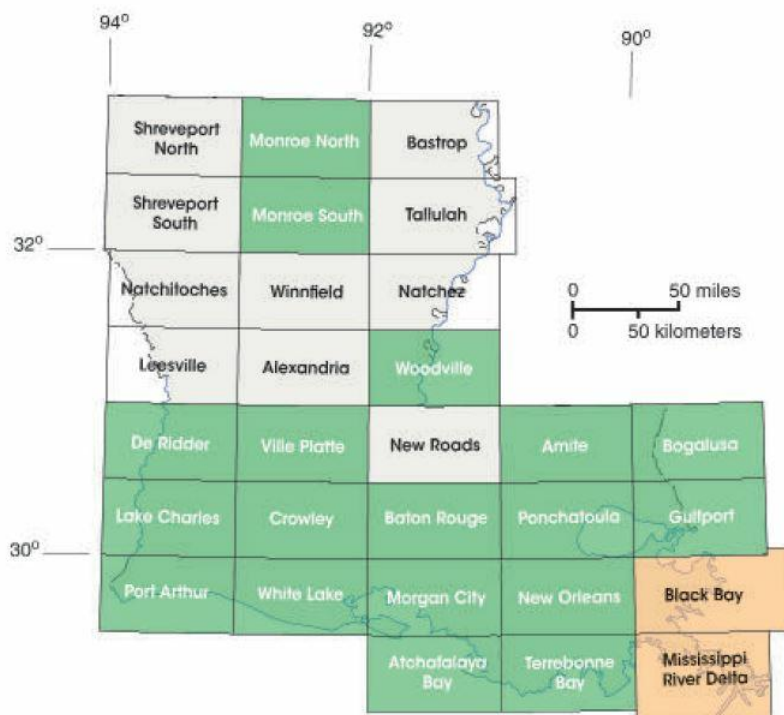
| upland streams | Calcasieu River | Red River |     |     |     |     |    | Mississippi River  |                    |     |
|----------------|-----------------|-----------|-----|-----|-----|-----|----|--------------------|--------------------|-----|
| Hua            | Hs              | Hrm       | Hrl | Hrs | Hrd | Hrc | Hb | Hmm <sub>3</sub> u | Hml <sub>3</sub> u |     |
|                |                 |           |     |     |     |     |    | Hmm <sub>3</sub> l | Hml <sub>3</sub> l |     |
| Pd             | Pds             |           |     |     |     |     |    |                    |                    |     |
|                | Pdm             |           |     |     |     |     |    |                    |                    |     |
| Pp             | Pp              |           |     |     |     |     |    |                    | Ppbc               | Ppl |
|                |                 |           |     |     |     |     |    |                    |                    |     |
|                |                 | Ppbe      | Ppe |     |     |     |    |                    |                    |     |
| Pi             | Pio             | Pio       |     |     |     |     |    |                    |                    |     |
|                | Pie             |           |     |     |     |     |    |                    |                    |     |
|                | Pil             |           |     |     |     |     |    |                    |                    | Pil |
| P <sub>u</sub> | P <sub>uw</sub> |           |     |     |     |     |    |                    |                    |     |

Graphic from: [Ville Platte 30 x 60 Minute Geologic Quadrangle](#) (GRI Source Map ID 41780)

**\*\* see the LGS source publication for information pertaining to units presented on the correlation of map units figure above, but that are not mentioned in this document nor are on any GRI digital geologic-GIS map (but are present on the source map).**

## Louisiana Geological Survey 2014 Status of 30 x 60 Minute Quadrangle Geologic Mapping

The status of Louisiana Geology Survey 30 x 60 minute quadrangle mapping as of 2014 is presented below. The status figure was taken from the most recent Louisiana Geology Survey 30 x 60 minute quadrangle map used by the Geologic Resources Inventory.



30 x 60 Minute Louisiana Geologic Quadrangle Index

- Published
- 2014 Publications

*Graphic from:* Heinrich, P., 2014, Black Bay 30 x 60 minute geologic quadrangle (includes portions of North Islands, LA, and Biloxi, MS quadrangles): Louisiana Geological Survey, Geologic Quadrangle Series Map (1:100,000), scale 1:100,000. (GRI Source Map ID 76055)

## Louisiana Geological Survey 1:100K Use Constraints

The views and conclusions contained in these documents are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government or the state of Louisiana.

These maps have been carefully prepared from the best existing sources available at the time of preparation. However, the Louisiana Geological Survey and Louisiana State University do not assume responsibility or liability for any reliance thereon. This information is provided with the understanding that it is not guaranteed to be correct or complete, and conclusions drawn from such data are the sole responsibility of the user. These regional geologic quadrangles are intended for use at the scale of 1:100,000. A detailed on-the-ground survey and analysis of a specific site may differ from these maps.

*Graphic from multiple LGS source maps and pluralized.*

## GRI Digital Data Credits

This document was developed and completed by Stephanie O'Meara and James Winter (Colorado State University) for the NPS Geologic Resources Division (GRD) Geologic Resources Inventory (GRI) Program. Quality control of this document by Stephanie O'Meara. Index map graphic by Stephanie O'Meara.

The information in this document was compiled from GRI source maps and is intended to accompany the digital geologic-GIS map(s) and other digital data for Jean Lafitte National Historical Park and Preserve, Louisiana (JELA) developed by Stephanie O'Meara, Rachel Yoder and James Winter (see the [GRI Digital Maps and Source Map Citations](#) section of this document for all sources used by the GRI in the completion of this document and related GRI digital geologic-GIS maps).

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